

REMARKS

This application has been carefully reviewed in light of the Office Action dated May 23, 2008. Claims 1, 3 and 4 are currently in the application, with claim 2 having been canceled without prejudice or disclaimer of the subject matter contained therein. Claims 1 and 4 are the independent claims. Reconsideration and further examination are respectfully requested.

Claims 1 to 4 are rejected under 35 U.S.C. § 112, first paragraph, for allegedly failing to comply with the enablement requirement. Specifically, the Office Action has contended that the application does not disclose how a concentration of less than 0% is measured. Independent claims 1 and 4 have been amended to specify that the concentration of the liquid reducing agent is calculated, rather than detected, based on heat transfer characteristics between two positions spaced apart from each other in the storage tank. As discussed in the paragraphs beginning on page 11, line 4, and on page 12, line 5, of the specification, because the concentration of the liquid reducing agent is calculated based on heat transfer characteristics, the calculated concentration may be less than 0% for water. One skilled in the art will recognize that even though a measured concentration of less than 0% may not be possible, a calculated concentration of less than 0% is possible.

The Office Action further contended that the application does not disclose how the control unit or the display device are disposed, which one is disposed, or provide the meaning of the term “disposed.” In response, Applicants have amended claim 3 to remove the term “disposed” and to specify that the claimed apparatus further comprises a display device.

Reconsideration and withdrawal of the § 112, first paragraph, rejections of claims 1 to 4 are respectfully requested.

Claims 1 to 4 are rejected under 35 U.S.C. § 112, second paragraph, for alleged indefiniteness. In particular, the Office Action has contended that the range criteria indicated in the claims do not provide a particular, physically achievable range. Independent claims 1 and 4 have been amended to more clearly recite the relationships between the calculated concentration ranges and the discriminated liquid type. For example, the liquid is discriminated as the liquid reducing agent when the calculated concentration is greater than 0% and less than or equal to a predetermined concentration. If the calculated concentration is greater than the predetermined concentration, the claimed apparatus/method discriminates that the storage tank is empty. Accordingly, the claims are believed to clearly identified particular ranges for discriminating whether the liquid is water or the liquid reducing agent, and whether the storage tank is empty. Reconsideration and withdrawal of the § 112, second paragraph, rejection of claims 1 to 4 are respectfully requested.

Claims 1, 2 and 4 are rejected under 35 U.S.C. § 102(e) as being anticipated by U.S. Patent Application Publication No. 2007/0054409 ("Inoue"). Claim 3 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Inoue in view of U.S. Patent Application Publication No. 2007/0163238 ("Gerlach"). Applicants have reviewed the applied references and respectfully submit that the claimed invention is patentably distinguishable over these references for at least the following reasons.

As shown above, the subject matter of claim 2 has been incorporated into independent claims 1 and 4. Specifically, independent claims 1 and 4 now include the features that the frequency at which a calculated concentration of a liquid reducing agent becomes less than 0% is counted, and when the counted frequency is greater than or equal to a predetermined frequency greater than 1 it is discriminated that the liquid in a storage tank is water. In this manner,

erroneous discriminations that the liquid is water due to noise or other errors are reduced. The applied references are not seen to disclose or suggest the foregoing features of the claimed invention.

Inoue concerns a urea concentration detection device for identifying urea concentration. Gerlach, which was applied in the rejection of dependent claim 3, concerns the metering of a reagent into the exhaust gas flow of an internal combustion engine. Neither of these references is seen to disclose or even suggest at least the feature of counting up a frequency at which a calculated concentration is equal to or less than a specified value and making a discrimination on the type of liquid when the counted frequency is greater than or equal to a predetermined frequency.

Therefore, independent claims 1 and 4 are believed to be allowable over the applied references. Reconsideration and withdrawal of the § 102(e) rejection of claims 1 and 4 are respectfully requested.

Claim 3 is dependent from independent claim 1 and therefore is believed to be allowable over the applied references for at least the same reasons. Because each dependent claim is deemed to define an additional aspect of the invention, however, the individual consideration of claim 3 on its own merits is respectfully requested.

In view of the foregoing amendment and remarks, the entire application is believed to be in condition for allowance and such action is respectfully requested at the Examiner's earliest convenience.

Application No.: 10/577,495

To the extent necessary, a petition for an extension of time under 37 C.F.R. 1.136 is hereby made. Please charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account 502203 and please credit any excess fees to such deposit account.

Respectfully submitted,

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